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- Das Gupta, D.K., and G. Paku. Effect of nitrogen level on grain yield of rice under bush fallow continuous rice cultivation in high rainfall. 8(5) (Oct 1983), 30.
- Ghobrial, G.I. Effect of nitrogen fertilizer and weed management on performance of four rice varieties in Sudan Gezira. 8(2) (Apr 1983), 16-17.

- Ghobrial, G.I. Response of irrigated dry seeded rice to nitrogen level, interrow spacing, and seeding rate in a semiarid environment. 8(4) (Aug 1983), 27-28.
- Gill, M.P.S., and G. Dev. Evaluation of nitrogen availability indices for rice in alluvial soils. 8(4) (Aug 1983), 23-24.
- Ho, D.T., and J.G. Kibuka. Effect of nitrogen and plant density on rice stem borer infestation in Western Kenya. 8(5) (Oct 1983), 17-18.
- Khind, C.S., and M.F. Kazibwe. Efficiency of different urea fertilizers in lowland rice. 8(5) (Oct 1983), 21-22.
- Khind, C.S., and M.F. Kazibwe. Nitrogen release patterns of sulfur-coated urea in wetland rice. 8(4) (Aug 1983), 25.
- Mathewkutty, T.I., and C. Sreedharan. Azolla as a substitute for nitrogen fertilizer in rice. 8(2) (Apr 1983), 20.
- Meelu, O.P., and R.S. Rekhi. Fertilizer nitrogen management in wheat - summer mung - rice crop rotation. 8(5) (Oct 1983), 31.
- Meelu, O.P., and R.S. Rekhi. Performance of modified urea fertilizer on a sandy loam soil. 8(5) (Oct 1983), 25-26.
- Misra, A.K., and S.C. Mathur. Sheath rot incidence in cultivars grown at different nitrogen levels. 8(2) (Apr 1983), 5-6.
- Peeran, S.N., and B.V. Anandan. Yield response of 10 rice to different nitrogen levels. 8(3) (Jun 1983), 4.
- Quddus, Md. Abdul, and J.W. Pendleton. Effect of deep placement of nitrogen fertilizer on ratoon rice. 8(4) (Aug 1983), 22-23.
- Ram, G., and M.K. Misra. Effect of blue-green algae and nitrogen levels on rice yields. 8(6) (Dec 1983), 23-24.
- Rao, Y. Yogeswara, G. Rama Subba Reddy, and K. Ramasashaiah. Azolla -- a supplemental nitrogen source for flooded rice culture. 8(2) (Apr 1983), 20.
- Rao, Y. Yogeswara, W.A. Mirza, and C.S. Reddy. Foliar spraying *Eichhornia* inoculum and incorporation of *Eichhornia* and *Ipomoea* green leaves as supplemental nitrogen sources. 8(2) (Apr 1983), 19.
- Ray, N., R.K. Gupta, D. Singh, and V.K. Khaddar. Effect of source and timings of nitrogen fertilizer application on rice grain yield in heavy sodic soil. 8(5) (Oct 1983), 27-28.
- Sagar, R.L., and G.L. Ray. Fertilizer usage and productivity of aus, aman, and boro rice. 8(2) (Apr 1983), 19-20.
- Singh, B.K., and R.P. Singh. Nitrogen management in rainfed lowland transplanted rice grown on calcareous soil. 8(6) (Dec 1983), 26-27.
- Singh, C.M., and N. Kumar. Nitrogen fertilization in transplanted rice. 8(5) (Oct 1983), 27.
- Singh, T.N., G. Singh, and H.P. Singh. Nitrogen fertilization and spacing to maximize upland rice yield. 8(6) (Dec 1983), 27.
- Srinivasan, S. Effect of azolla manuring with nitrogen fertilization. 8(2) (Apr 1983), 18.
- Thind, H.S., B. Singh, and P.S. Deol. Effect of different sources and levels of nitrogen fertilizers on rice grain yield. 8(4) (Aug 1983), 23.
- Vidhyasekaran, P., K. Ranganathan, S.P. Palaniappan, and S. Ramasamy. Effect of slow-release nitrogen fertilizers on rice brown spot disease. 8(4) (Aug 1983), 11.

Viswanath, A.P., Y.S. Veeraraja Urs, and M.A. Singla-char. Response of prerelease rice cultures to nitrogen in light-textured soil. 8(2) (Apr 1983), 21.

#### FERTILIZER - PHOSPHORUS

Bora, P.K., and N.N. Goswami. Effect of phosphorus fertilization and soil moisture regimes on phosphorus content of rice crop. 3(1) (Feb 1983), 19-20.

Jakhro, A.A. Effect of phosphorus fertilizer placement on root and shoot growth of wetland rice. 8(2) (Apr 1983), 20-21.

Rabindra, B., and B. Jagannath. Rock phosphate-pyrite mixture: a good substitute for single superphosphate. 9(5) (Oct 1983), 24-25.

Sagar, R.L., and G.L. Ray. Fertilizer usage and productivity of aus, aman, and boro rice. 8(2) (Apr 1983), 19-20.

#### FERTILIZER PLACEMENT

Lal, P., R.C. Gautam, P.S. Bisht, and P.C. Pandey. Effect of USG placement and planting geometry on yield of random-planted rice. 8(6) (Dec 1983), 28.

Quddus, M.D. Abdul, and J.W. Pendleton. Effect of deep placement of nitrogen fertilizer on ratoon rice. 8(4) (Aug 1983), 22-23.

Thangamuthu, G.S., and S. Subramanian. Effects of plant population and urea supergranule deep placement on rice yield. 8(5) (Oct 1983), 23-24

#### GALL MIDGE

Chand, P., and R.C. Acharya. Losses to gall midge. 1(1) (Feb 1983), 10-11.

Jena, B.C., N.C. Patnaik, and N. Panda. Incidence of rice gall midge at Bhubaneswar, Orissa, India. 8(3) (Jun 1983), 12.

Kittur, S.U., and R.K. Agrawal. Gall midge damage at rice panicle stage. 8(5) (Oct 1983), 19.

#### GALL MIDGE CONTROL

Joshi, R.C., and M.S. Venugopal. Light trap catches of rice gall midge. 8(4) (Aug 1983), 19-20.

Patnaik, N.C., and J.M. Sathpathy. Parasitization of gall midge maggots in exposed and suppressed galls. 8(5) (Oct 1983), 16-17.

Shukla, B.C., Jr., and U.K. Kaushik. Effect of some granular insecticides on rice gall midge. 8(6) (Dec 1983), 14.

Shukla, B.C., U.K. Kaushik, S.K. Shrivastava, D.J. Pophaly, and R.K. Agrawal. A new gall midge parasite in M.P., India. 8(6) (Dec 1983), 17.

#### GALL MIDGE - VARIETAL RESISTANCE

Kantanyukul, W., S. Kadkao, C. Tayathum, P. Khambanonda, and M. Chomhubol. Resistance of RD4 and RD7 mutants to rice gall midge. 8(1) (Feb 1983), 7-8.

Samal, P., and B.C. Misra. Evaluation of promising gall midge-resistant cultivars. 8(4) (Aug 1983), 8.

GLUME DISCOLORATION. See GRAIN DISCOLORATION.

#### GRAIN DISCOLORATION

Duraiswamy, V.S., and V. Mariappan. Biochemical properties of discolored rice grains. 8(3) (Jun 1983), 9.

Duraiswamy, V.S., and V. Mariappan. Rice grain discoloration. 8(3) (Jun 1983), 9-10.

Pandurangegowda, K.T., S. Kumaraswamy, and R.C. Yarguntaiah. Reaction of released and prerelease rice varieties to various diseases in Karnataka, India. 8(4) (Aug 1983), 7-8.

Roy, A.K. Rice grain discoloration in Assam, India. 8(5) (Oct 1983), 10.

#### GRAIN QUALITY

Naidu, B.S., and S.M. Imtiaz. KMP-1 (Mandya Vani) -- a new short duration, high yielding, superfine paddy released in Karnataka, India. 8(1) (Feb 1983), 5-6.

#### GRASSHOPPERS

Garg, D.K., and J.P. Tandon. Orthoptera pests of transplanted rice in hills of Uttar Pradesh. 8(1) (Feb 1983), 18.

#### GRASSY STUNT

Hibino, H., T. Usugi, and T. Omura. Morphology and serological relationship of grassy stunt-associated filamentous nucleoprotein and rice stripe virus. 8(1) (Feb 1983), 9-10.

Hibino, H., T. Usugi, T. Tsuchizaki, M. Iwazaki, and S. Izumi. Purification and properties of grassy stunt-associated filamentous particles. 8(2) (Apr 1983), 11.

Hibino, H., P.Q. Cabauatan, T. Omura, and T. Tsuchizaki. Purification and serological properties of rice grassy stunt virus 2. 8(6) (Dec 1983), 11-12.

Hibino, H., and P.Q. Cabauatan. Serological relations between rice grassy stunt and the unknown disease of rice transmitted by Nilaparvata lugens (Stål) in the Philippines. 8(2) (Apr 1983), 12.

#### GREEN LEAFHOPPER

Balasubramanian, M., and V. Mariappan. Fungal pathogens of Nephotettix virescens Dist. and Nilaparvata lugens Stål. 8(3) (Jun 1983), 11-12.

Rao, G. Mohana, and A. Anjaneyulu. Effect of meteorological factors on oviposition and nymphal hatching of rice tungro virus vector Nephotettix virescens. 8(1) (Feb 1983), 12-13.

Reddy, K. Dharma, and D.S. Mishra. Light trap catches of green leafhoppers by time of day. 8(4) (Aug 1983), 19.

Valencia, S.K., O. Mochida, and R.P. Basilio. Efficacy of buprofezin (NNI-750) for brown planthopper (N. lugens), green leafhopper (Nephotettix sp.), and whitebacked planthopper (S. furcifera) control. 8(4) (Aug 1983), 18.



## GROWTH REGULATORS

- Quddus, Md. Abdul, and J.W. Pendleton. Effects of growth regulators applied to the main crop on ratoonability of IR9784-52-2-3-2 in pots. 8(1) (Feb 1983), 21.

## GROWTH STAGES

- Acharya, S., and K.D. Sharma. Genetics of cold tolerance at rice reproductive stage. 8(2), (Apr 1983), 10-11.
- Thakur, R., and R.K. Singh. Screening for quick establishment and submergence tolerance at seedling stage. 8(2) (Apr 1983), 9.

## HERITABILITY STUDIES

- Chauhan, V.S., and J.P. Tandon. Inheritance of plant height in a cross of two cold-tolerant rice varieties. 8(4) (Aug 1983), 3-4.
- Eruotor, P.G. Inheritance of leaf sheath color in rice. 8(5) (Oct 1983), 4.
- Flores-Gaxiola, J.A., F.L. Nuque, J.P. Crill, and G.S. Khush. Inheritance of blast *Piricularia oryzae* in rice. 8(4) (Aug 1983), 5-6.

## HISPA

- Singh, S. Amu. Changing trends of insect pests of rice in Manipur. 8(1) (Feb 1983), 12.

## HYBRID RICE

- Chauhan, J.S., S.S. Virmani, R. Aquino, and B.S. Vergara. Evaluation of hybrid rices for ratooning ability. 8(6) (Dec 1983), 6.
- Mohanty, P.L., and N.P. Sarma. Fertility restorers for cytotsterile stocks. 8(2) (Apr 1983), 3-4.
- Correction in 8(3) (Jun 1983), 22.

## IMPLEMENTS, FARM. See EQUIPMENT.

## INSECT PESTS

- Garg, D.K., and J.P. Tandon. Orthoptera pests of transplanted rice in hills of Uttar Pradesh. 8(1) (Feb 1983), 18.

## INSECTICIDE TESTING - GRANULES

- Katanyukul, W., and T. Bhudhasamai. Granular insecticides for control of major rice insects in Thailand. 8(1) (Feb 1983), 17-18.
- Shukla, B.C., Jr., and U.K. Kaushik. Effect of some granular insecticides on rice gall midge. 8(6) (Dec 1983), 14.

## INSECTICIDE TESTING - SPRAYS

- Katanyukul, W., and T. Bhudhasamai. Chemical control of azolla insects. 8(1) (Feb 1983), 14-15.
- Krishnaiah, N.V., and M.B. Kalode. Effect of simulated rainfall on insecticide spray effectiveness. 8(3) (Jun 1983), 12.
- Raman, K., and S. Uthamasamy. Insecticide toxicity to natural brown planthopper enemies. 8(4) (Aug 1983), 20.

- Razvi, S.A., C. Subba Rao, and N. Venugopal Rao. Efficacies of new granular and spray insecticides on rice pests. 8(1) (Feb 1983), 15-16.
- Singh, D.P., G.S. Dhaliwal, and J. Singh. Rice thrips control by foliar insecticides. 8(2) (Apr 1983), 15.

- Valencia, S.K., O. Mochida, and R.P. Basilio. Efficacy of buprofezin (NNI-750) for brown planthopper (*N. lugens*) green leafhopper (*Nephotettix* sp.), and whitebacked planthopper (*S. furcifera*) control. 8(4) (Aug 1983), 18.

## IRON UPTAKE

- Thind, H.S., and D.S. Chahal. Effect of ferrous sulfate application on rice yield and iron uptake. 8(1) (Feb 1983), 19.

## LEAF SCALD

- Pandurange Gowda, K.T., N.A. Janardhanagowda, and R.C. Yaraguntaiah. Leaf scald disease of rice at Ponnampet, Karnataka, India. 8(6) (Dec 1983), 4-5.
- Singh, S. Amu. Changing trends of rice diseases in Manipur. 8(1) (Feb 1983), 10.
- Thomas, M.D., and S.A. Raymundo. Response of two rice varieties to *Rhynchosporium oryzae* infection. 8(4) (Aug 1983), 11-12.

## LEAFFOLDER

- Balasubramanian, P., S.P. Palaniappan, and M. Gopalan. Effect of carbofuran and nitrogen on leaffolder incidence. 8(5) (Oct 1983), 13-14.
- Barrion, A.T., and J.A. Litsinger. *Trichomalopsis apantelectena* (Crawford) (Hymenoptera: Pteromalidae): correct name for the larval parasite of the rice skipper. 8(6) (Dec 1983), 14.
- Endo, S. A leaf dipping method for testing insecticide toxicity. 8(6) (Dec 1983), 14-15.
- Kudagamage, C. Leaffolder population monitoring using a sex pheromone. 8(1) (Feb 1983), 11.
- Murugesan, S., and S. Chelliah. Rice yield loss caused by leaffolder damage at tillering stage. 8(4) (Aug 1983), 13-14.
- Murugesan, S., and S. Chelliah. Rice yield losses caused by leaffolder damage to the flag leaf. 8(4) (Aug 1983), 14.
- Nadarajan, L., and N.R. Nair. Screening for leaffolder resistance. 8(3) (Jun 1983), 5.
- Pradhan, S.B., and B.B. Shahi. Leaffolder outbreak in tarai belt of Nepal. 8(2) (Apr 1983), 13.
- Saroja, S., and N. Raju. Influence of planting time on rice leaffolder incidence. 8(6) (Dec 1983), 17.

## LEAFHOPPERS

- Gowda, G., K.R. Jayaram, and Nagaraju. *Thaia subrufa* (Homoptera: Cicadellidae) occurrence in Karnataka, India. 8(5) (Oct 1983), 17.

## LIGHT TRAPS

- Janarthanan, B., and S. Mohan. Influence of lunar cycle on light trap catches of rice stem borer. 8(4) (Aug 1983), 16.

Jeffrey, M.H., and V.A. Dyck. Effect of moonlight on light-trap catches of brown planthopper. 8(6) (Dec 1983), 13.

Joshi, R.C., and M.S. Venugopal. Light trap catches of rice gall midge. 8(4) (Aug 1983), 19-20.

Reddy, K. Dharma, and D.S. Mishra. Light trap catches of green leafhoppers by time of day. 8(4) (Aug 1983), 19.

LOWLAND RICE. See WETLAND RICE.

#### MANURE

Khind, C.S., O.P. Meelu, and V. Beri. Age of dhaincha, green matter, and nitrogen economy in rice. 8(2) (Apr 1983), 17-18.

Rao, Y. Yogeswara, W.A. Mirza, and C.S. Reddy. Foliar spraying Eichhornia inoculum and incorporation of Eichhornia and Ipomoea green leaves as supplemental nitrogen sources. 8(2) (Apr 1983), 19.

Srinivasan, S. Effect of azolla manuring with nitrogen fertilization. 8(2) (Apr 1983), 18.

Swarup, A. Effect of micronutrients and farmyard manure on yield and micronutrient content of rice. 8(5) (Oct 1983), 22.

#### MULCH

Roy, A.K., and S. Hussain. Sawdust-mulching for controlling weeds in transplanted summer rice. 8(4) (Aug 1983), 20-21.

MULTIPLE CROPPING. See CROPPING SYSTEMS.

#### MUTATION

Avakyan, E.R., N.E. Alyoshin, E.V. Alexeenko, and E.P. Alyoshin. A new rice form with low endogenous gibberellin content. 8(6) (Dec 1983), 3-4.

Katanyukul, W., S. Kadkao, C. Tayathum, P. Khambanonda, and M. Chomhubol. Resistance of RD4 and RD7 mutants to rice gall midge. 8(1) (Feb 1983), 7-8.

Rangasamy, S.R. Sree, and C.R. Anandakumar. Promising TKM6 rice mutants. 8(4) (Aug 1983), 4-5.

#### NARROW BROWN LEAF SPOT

Singh, S. Amu. Changing trends of rice diseases in Manipur. 8(1) (Feb 1983), 10.

#### NECK ROT

Singh, S. Amu. Changing trends of rice diseases in Manipur. 8(1) (Feb 1983), 10.

#### NEEM PRODUCTS

Ho, D.T., and J.G. Kibuka. Neem (Azadiractha indica A. Juss) products for control of rice stem borers. 8(5) (Oct 1983), 15-16.

Kannaian, K., M. Thangaraju, and G. Oblisami. Effect of neem cake on azolla growth and nitrogen fixation. 8(3) (Jun 1983), 21.

Mariappan, V., and R.C. Saxena. Effect of blends of

custard-apple oil and neem oil on survival of Nephotettix virescens and tungro virus transmission. 8(4) (Aug 1983), 15-16.

#### NEMATODES

Gokulapalan, C., and M.C. Nair. Field screening for sheath blight and rice root nematode resistance. 8(6) (Dec 1983), 4.

Meneses Carbonnel, R. Pathogens and nematodes for control of rice water weevil in Cuba. 8(6) (Dec 1983), 16-17.

Subramanian, P., and B. Velayutham. Control of rice root nematode. 8(3) (Jun 1983), 15.

Subramanian, P., P. Sathyamurthy, and B. Velayutham. Dissemination of rice root nematode through rice seedlings. 8(4) (Aug 1983), 21.

NITROGEN FERTILIZER. See FERTILIZER - NITROGEN.

#### NITROGEN TRANSFORMATION

Patro, G.K., and B.C. Sahu. Use of slow-release fertilizers to reduce nitrification. 8(6) (Dec 1983), 23.

#### NITROGEN RICE EFFICIENCY

Singh, T.N., G. Singh, and H.P. Singh. Nutrient use efficiency and upland rice yield. 8(3) (Jun 1983), 19.

#### NOMENCLATURE

Barrion, A.T., and J.A. Litsinger. Trichomalopsis apanteloctena (Crawford) (Hymenoptera: Pteromalidae): correct name for the larval parasite of the rice skipper. 8(6) (Dec 1983), 14.

#### OBITUARY

Dr. James C. Moomaw dies. 8(5) (Oct 1983), back cover.

#### PENYAKIT MERAH DISEASE

Ong Ching Ang, Chang Poon Min, Ho Nai Kim, T. Omura, T. Usugi, and Y. Saito. Morphology and serological relationship of penyakit merah virus in Malaysia and rice tungro virus in the Philippines. 8(6) (Dec 1983), 10.

#### PHENOLS

Valluvaparidasan, V., and V. Mariappan. Accumulation of phenolics in rice varieties due to infection by Xanthomonas campestris pv. oryzae. 8(3) (Jun 1983), 10-11.

#### PHOTOPERIOD SENSITIVITY

Gomosta, A.R., and B.S. Vergara. Photoperiod sensitivity of Rayada rices. 8(6) (Dec 1983), 29.

#### PLANT HEIGHT

Chauhan, V.S., and J.P. Tandon. Inheritance of plant height in a cross of two cold-tolerant rice varieties. 8(4) (Aug 1983), 3-4.



Prasad, S.S.N.D.B. Plant height and growth duration at increased water depths. 8(4) (Aug 1983), 9.

#### PLANT SPACING

Ghobrial, G.I. Response of irrigated dry seeded rice to nitrogen level, interrow spacing, and seeding rate in a semiarid environment. 8(4) (Aug 1983), 27-28.

Lal, P., R.C. Gautam, P.S. Bisht, and P.C. Pandey. Effect of USG placement and planting geometry on yield of random-planted rice. 8(6) (Dec 1983), 28.

Singh, T.N., G. Singh, and H.P. Singh. Nitrogen fertilization and spacing to maximize upland rice yield. 8(6) (Dec 1983), 27.

#### PLANTHOPPERS

Saxena, R.C., and A.T. Barrion. Cytology of Nilaparvata bakeri (Muir), a grass-infesting planthopper species. 8(6) (Dec 1983), 18-19.

#### PLANTING DATE

Cai, Yi-zhong, and Chang-ling Ding. Transplanting time and grain yield relationships of late rice for a triple-cropping system. 8(1) (Feb 1983), 22-23.

Gautam, R.C., and K.C. Sharma. Effect of rice planting date and density on weed growth. 8(2) (Apr 1983), 16.

Saroja, S., and N. Raju. Influence of planting time on rice leafhopper incidence. 8(6) (Dec 1983), 17.

Urkurkar, J.S., A.S.R.A.S. Sastri, and B.R. Chaudrawanshi. Optimum transplanting time for rice: an agrometeorological approach. 8(6) (Dec 1983), 24.

#### PLANTING DENSITY

Gautam, R.C., and K.C. Sharma. Effect of rice planting date and density on weed growth. 8(2) (Apr 1983), 16.

Ho, D.T., and J.G. Kibuka. Effect of nitrogen and plant density on rice stem borer infestation in western Kenya. 8(5) (Oct 1983), 17-18.

Kolhe, S.S., P.P.N. Rao, and B.N. Mittra. Effect of planting density and submergence level on weed density in rice fields. 8(3) (Jun 1983), 15-16.

Thangamuthu, G.S., and S. Subramanian. Effects of plant population and urea supergranule deep placement on rice yield. 8(5) (Oct 1983), 23-24.

#### PUBLICATIONS

Brown planthopper publications. 8(2) (Apr 1983), 23. Farmer's primer copublished. 8(3) (Jun 1983), back cover.

Field problems revised. 8(1) (Feb 1983), 23-back cover.

New IRRI publications. 8(1) (Feb 1983), back cover.

New IRRI publications. 8(2) (Apr 1983), 23.

New IRRI publications. 8(3) (Jun 1983), back cover.

New IRRI publications. 8(4) (Aug 1983), back cover.

Pesticide application journal. 8(5) (Oct 1983), back cover.

#### PULLING FORCE OF RICE SEEDLINGS

Brar, J.S., and H.S. Sur. Effect of organic residues on pulling force of rice seedlings. 8(5) (Oct 1983), 26-27.

#### RAGGED STUNT

Disthaporn, S., H.D. Catling, D. Chettanachit, and M. Putta. Influence of time of rice ragged stunt virus infection on deepwater rice yield. 8(5) (Oct 1983), 11.

Zhou, L.G., K.Y. Tu, L. Tsao, and S.Y. Li. Screening of rice varieties for resistance to ragged stunt disease. 8(2) (Apr 1983), 6.

#### RATOON CROP

Karunakaran, K., M.B. Jalajakumari, and P. Sreedevi. Ratoon performance of some short-duration rice cultures. 8(4) (Aug 1983), 4.

Nayak, R.L., M. Das, and S.S. Mandal. Ratoon rice can yield well. 8(2) (Apr 1983), 5.

Quddus, Md. Abdul, and J.W. Pendleton. Effect of deep placement of nitrogen fertilizer on ratoon rice. 8(4) (Aug 1983), 22-23.

Quddus, M.A., and J.W. Pendleton. Effect on ratoon rice of cutting height and time of nitrogen application on the main crop. 8(3) (Jun 1983), 16-17.

Roy, S.K.B., R. Ghosh, and J. Mondal. Comparison of photoperiod-sensitive ratooned rice and normal sown aman rice. 8(5) (Oct 1983), 22-23.

#### RATOONING ABILITY

Chauhan, J.S., S.S. Virmani, R. Aquino, and B.S. Vergara. Evaluation of hybrid rices for ratooning ability. 8(6) (Dec 1983), 6.

Quddus, Md. Abdul, and J.W. Pendleton. Effects of growth regulators applied to the main crop on ratooning ability of IR9784-52-2-3-2 in pots. 8(1) (Feb 1983), 21.

#### RICE AGGLUTININ

Addy, S.K., R.N. Goodman, and A.L. Karr. Antibiotic activity of rice agglutinin. 8(5) (Oct 1983), 5.

#### RICE BREEDING

Sarkar, H.C., and N.M. Miah. Local indica rice varieties with desirable floral traits influencing outcrossing. 8(5) (Oct 1983), 3.

#### RICE BREEDING METHODS (TECHNIQUES)

Gurunathan, G.M., and S.R.S. Rangasamy. Anther culture in rice. 8(4) (Aug 1983), 10-11.

Ling, D.H., W.Y. Chen, M.F. Chen, and Z.R. Ma. Rice plantlets obtained from a somatic embryogenic cluster from immature panicle culture in vitro. 8(6) (Dec 1983), 9.

## RICE DWARF DISEASE

Singh, S.K., and R.C. Chaudhary. Occurrence of rice yellow dwarf disease in Patna (Bihar), India. 8(6) (Dec 1983), 11.

## RICE HULL

Yein, Chi-Fuu, J. Tschen, and T.C. Yang. Effect of rice hulls applied to rice fields. 8(5) (Oct 1983), 27.

## RICE SKIPPER

Barrion, A.T., and J.A. Litsinger. *Trichomalopsis apanteloctena* (Crawford) (Hymenoptera: Pteromalidae): correct name for the larval parasite of the rice skipper. 8(6) (Dec 1983), 14.

## RICE STRIPE VIRUS

Hibino, H., T. Usugi, and T. Omura. Morphology and serological relationship of grassy stunt-associated filamentous nucleoprotein and rice stripevirus. 8(1) (Feb 1983), 9-10.

## RICE TRANSITORY YELLOWING DISEASE

Disthaporn, S., D. Chettanachit, and M. Putta. Unknown virus-like rice disease in Thailand. 8(6) (Dec 1983), 12.

## RICE VARIETIES, ADAPTED

Jayaraj, D. IET6148, a variety for direct seeding. 8(2) (Apr 1983), 4.

Malik, S.A., S.C. Ahuja, and C.V.S. Malik. IR36, a promising variety for bacterial blight-prone areas of Haryana. 8(4) (Aug 1983), 7.

Naidu, B.S., and S.M. Imtiaz. KMP-1 (Mandya Vani) -- a new short duration, high yielding, superfine paddy released in Karnataka, India. 8(1) (Feb 1983), 5-6.

Nguyen, van Luat, Bui Ba Bong, Nguyen Minh Chau, and J. Chandra Mohan. Performance of IR42 and IR48 in Cuu Long Delta, Vietnam. 8(1) (Feb 1983), 4.

Nguyen, van Luat, B.K. Singh, Nguyen Minh Chau, Tran Van Hoa, and Le Van Thanh. Performance of some promising varieties in floating-rice areas of Cuu Long Delta. 8(5) (Oct 1983), 7-8.

Sharma, K.D., R.P. Kaushik, and S.L. Sharma. Himalaya 1 and Himalaya 2 -- two new semidwarf, cold-tolerant rices for Himachal Pradesh, India. 8(4) (Aug 1983), 10.

Sharma, K.K., R.P. Kaushik, S.L. Sharma, and P.C. Ka-toch. HPU741, a promising early, cold-tolerant rice variety. 8(5) (Oct 1983), 9-10.

Singh, B.N., R. Thakur, and S.P. Sahu. Rasi, a drought-tolerant variety. 8(5) (Oct 1983), 9.

Srivastava, D.P. CR289-1008 and CR289-1208 -- very early-maturing rices. 8(1) (Feb 1983), 5.

## RICE VARIETIES - CLASSIFICATION

Nakagahra, M. Varietal groups of rice cultivars in West Africa and the Americas. 8(1) (Feb 1983), 3-4.

## RICE VARIETIES, NEW

Harmel and A. Syarifuddin K. A new cold-tolerant rice for Indonesia. 8(6) (Dec 1983), 8.  
IR58, IR60 released in the Philippines. 8(4) (Aug 1983), 31.

Nanda, J.S., S.C. Mani, H. Singh, J.P. Singh, and C.V. Singh. Govind, an early-maturing rice variety. 8(2) (Apr 1983), 4-5.

Rangasamy, S.R. Sree, and C.R. Anandakumar. Promising TKM6 rice mutants. 8(4) (Aug 1983), 4-5.

RICE YELLOW DWARF DISEASE. See RICE DWARF DISEASE.

## RODENT PESTS

Chakkaravarthy, G., S. Uthamasamy, and K.M. Balasubramanian. Rodent damage on some rice varieties at Aduthurai, India. 8(2) (Apr 1983), 8-9.

## ROOT-KNOT NEMATODE

Pal, A.K., and A. Jayaprakash. Root-knot nematode damage to rice in West Bengal, India. 8(3) (Jun 1983), 14-15.

Rahman, M.L., and B. Taylor. Nematode pests associated with deepwater rice in Bangladesh. 8(5) (Oct 1983), 20-21.

## ROOT SYSTEMS

Jakhro, A.A. Effect of phosphorus fertilizer placement on root and shoot growth of wetland rice. 8(2) (Apr 1983), 20-21.

## SALINE SOILS

Ray, N., R.K. Gupta, D. Singh, and V.K. Khaddar. Effect of source and timings of nitrogen fertilizer application on rice grain yield in heavy sodic soil. 8(5) (Oct 1983), 27-28.

Sadana, U.S., and P.N. Takkar. Rice response to zinc at various salinity and alkalinity levels. 8(5) (Oct 1983), 29.

Swarup, A. Effect of amendments and presubmergence on Fe and Mn availability in sodic soil and on rice yield. 8(6) (Dec 1983), 27-28.

## SALINE SOILS - VARIETAL TOLERANCE

Jones, M.P., and J.W. Stenhouse. Salt tolerance of mangrove swamp rice varieties. 8(1) (Feb 1983), 8-9.

Sinha, T.S., and A.K. Bandyopadhyay. Rice tolerance for coastal salinity. 8(5) (Oct 1983), 6-7.

## SEED TREATMENT

Reddy, B.B., B.C. Ghosh, and M.M. Panda. Improvement of crop stand in flooded rice fields. 8(2) (Apr 1983), 18.

Sen, A., and J.M.I. Gulati. Effect of calcium peroxide coating on yield and yield attributes of Jaya. 8(4) (Aug 1983), 26.



## SEED VIABILITY

Haque, Md. Zahurul, and M. Maroon. Rice seed viability under two storage conditions. 8(5) (Oct 1983), 3-4.

## SEEDING RATE

Ghobrial, G.I. Response of irrigated dry seeded rice to nitrogen level, interrow spacing, and seeding rate in a semiarid environment. 8(4) (Aug 1983), 27-28.

Songmuang, P., N. Rangsichon, and W. Seetanun. Influence of seed rate and timing of fertilizer application on wet seeded rice yield. 8(3) (Jun 1983), 16.

SEEDLING AGE. See AGE OF SEEDLINGS.

## SEEDLING ESTABLISHMENT

Thakur, R., and R.K. Singh. Screening for quick establishment and submergence tolerance at seedling stage. 8(2) (Apr 1983), 9.

## SEMIWARF RICE

Prasad, S.S.N.D.B. Plant height and growth duration at increased water depths. 8(4) (Aug 1983), 9.

Sharma, K.D., R.P. Kaushik, and S.L. Sharma. Himalaya 1 and Himalaya 2 -- two new semidwarf, cold-tolerant rices for Himachal Pradesh, India. 8(4) (Aug 1983), 9-10.

Srivastava, D.P. CR289-1008 and CR289-1208 -- very early-maturing rices. 8(1) (Feb 1983), 5.

## SHEATH BLIGHT

Dev, V.P.S., and C.A. Mary. Varietal resistance to leaf blast and sheath blight at Pattambi, India. 8(5) (Oct 1983), 5-6.

Gokulapalan, C., and M.C. Nair. Collateral hosts of Rhizoctonia solani Kuhn causing sheath blight of rice. 8(6) (Dec 1983), 10.

Gokulapalan, C., and M.C. Nair. Field screening for sheath blight and rice root nematode resistance. 8(6) (Dec 1983), 4.

Naidu, V. Damodar. Sheath blight occurrence in rice nurseries. 8(6) (Dec 1983), 10-11.

Singh, S. Amu. Changing trends of rice diseases in Manipur. 8(1) (Feb 1983), 10.

## SHEATH BLOTCH

Shahjahan, A.K.M., H.U. Ahmed, and S.A. Miah. Sheath blotch of rice in Bangladesh. 8(2) (Apr 1983), 12.

## SHEATH ROT

Kang M.S., and G.S. Rattan. Sheath rot in the Punjab, India. 8(3) (Jun 1983), 7-8.

Misra, A.K., and S.C. Mathur. Sheath rot incidence in cultivars grown at different nitrogen levels. 8(2) (Apr 1983), 5-6.

## SOIL COMPOSITION

Ahmed, F., A. Islam, and S. Hoque. Nutrient status of some rice soils. 8(6) (Dec 1983), 25-26.

Pedrazzini, F.R. Mineral nitrogen distribution in a paddy soil profile. 8(3) (Jun 1983), 18.

Swarup, A. Effect of amendments and presubmergence on Fe and Mn availability in sodic soil and on rice yield. 8(6) (Dec 1983), 27-28.

## SOIL MOISTURE REGIMES

Balasubramaniyan, P., and S.P. Palaniappan. Effect of preplanting submergence and seedling age on wetland rice yield. 8(4) (Aug 1983), 26.

Bora, P.K., and N.N. Goswami. Effect of phosphorus fertilization and soil moisture regimes on phosphorus content of rice crop. 8(1) (Feb 1983), 19-20.

Swarup, A. Effect of amendments and presubmergence on Fe and Mn availability in sodic soil and on rice yield. 8(6) (Dec 1983), 27-28.

Thakur, R., and R.K. Singh. Screening for quick establishment and submergence tolerance at seedling stage. 8(2) (Apr 1983), 9.

Urs, Y.S. Veeraraja, A.P. Vishwanath, and M.A. Singlacher. Performance of rice transplanted under nonpuddled rainfed conditions. 8(2) (Apr 1983), 18-19.

## SOILS, ADVERSE

Singh, T.N. Rice - wheat pattern for increased cereal production in alkali soils of eastern Uttar Pradesh. 8(4) (Aug 1983), 29-30.

## STACKBURN

Singh, S. Amu. Changing trends of rice diseases in Manipur. 8(1) (Feb 1983), 10.

## STEM BORER

Ho, D.T., and J.G. Kibuka. Effect of nitrogen and plant density on rice stem borer infestation in Western Kenya. 8(5) (Oct 1983), 17-18.

Ho, D.T., and J.G. Kibuka. Stem borers in various rice ecosystems in Kenya. 8(5) (Oct 1983), 18.

## STEM BORER CONTROL

Garg, D.K., and J.P. Tandon. Sesamia inferens -- a serious pest of rice in Uttar Pradesh hills, India. 8(1) (Feb 1983), 6.

Ho, D.T., and J.G. Kibuka. Neem (Azadirachta indica A. Juss) products for control of rice stem borers. 8(5) (Oct 1983), 15-16.

Janarthanan, B., and S. Mohan. Influence of lunar cycle on light trap catches of rice stem borer. 8(4) (Aug 1983), 16.

Zafar, M. Akram. Effect of rice stubble on stem borer hibernation. 8(6) (Dec 1983), 16.

## STEM BORER - VARIETAL RESISTANCE

Garg, D.K., and J.P. Tandon. Sesamia inferens -- a serious pest of rice in Uttar Pradesh hills, India. 8(1) (Feb 1983), 6.

## STRAW MANAGEMENT

- Dhillon, N.S., and G. Dev. Effect of straw management on soil nitrogen in a rice - wheat rotation. 8(5) (Oct 1983), 25.

## SULFUR DEFICIENCY

- Mamaril, C.P., E.O. Momuat, and Ch. J.S. Momuat. Different tolerance of rices for low-sulfur soils. 8(3) (Jun 1983), 20.

## THRIPS

- Barwal, R.N., and N.S. Rao. Chemical control of thrips in the rice nursery. 8(6) (Dec 1983), 15.
- De Alwis, H.M. A simple technique for rearing rice thrips in the glasshouse. 8(5) (Oct 1983), 15.
- Singh, S. Amu. Changing trends of insect pests of rice in Manipur. 8(1) (Feb 1983), 12.
- Singh, J., and G.S. Dhaliwal. Evaluation of National Screening Nursery against rice thrips. 8(1) (Feb 1983), 8.
- Singh, D.P., G.S. Dhaliwal, and J. Singh. Rice thrips control by foliar insecticides. 8(2) (Apr 1983), 15.

TIMING OF FERTILIZER APPLICATION. See FERTILIZER MANAGEMENT.

## TRAINING PROGRAMS

- International course on seed technology for vegetable crops. 8(3) (Jun 1983), 23-back cover.
- Seed technology course. 8(2) (Apr 1983), 23.

## TRANSPIRATION

- Namuco, O.S., D.P. Garrity, and J.C. O'Toole. Panicle transpiration measurement with a potometer. 8(4) (Aug 1983), 28-29.
- Roberts, J., and C.H. Batchelor. Panicle transpiration studies in northeastern Sri Lanka. 8(3) (Jun 1983), 22.

## TRANSPLANTED RICE

- Biswas, S.B., and K. Bassi. Nitrogen management for transplanted rice in rainfed lowlands. 8(5) (Oct 1983), 30-31.
- Garg, D.K., and J.P. Tandon. Orthoptera pests of transplanted rice in hills of Uttar Pradesh. 8(1) (Feb 1983), 18.
- Raju, M.S., and Ch. Pulla Rao. Management of transplanted rice with seedlings of different ages. 8(4) (Aug 1983), 24.
- Roy, A.K., and S. Hussain. Sawdust mulching for controlling weeds in transplanted summer rice. 8(4) (Aug 1983), 20-21.
- Singh, B.K., and R.P. Singh. Nitrogen management in rainfed lowland transplanted rice grown on calcareous soil. 8(6) (Dec 1983), 26-27.
- Singh, C.M., and N. Kumar. Nitrogen fertilization in transplanted rice. 8(5) (Oct 1983), 27.

- Urs, Y.S. Veeraraja, A.P. Vishwanath, and M.A. Singlachar. Performance of rice transplanted under nonpuddled rainfed conditions. 8(2) (Apr 1983), 18-19.

## TUNGRO

- Hibino, H., E.R. Tiongco, and R.C. Cabunagan. Rice tungro virus complex in tungro-resistant IR varieties. 8(4) (Aug 1983), 12-13.
- Mariappan, V., H. Hibino, T. Mew, and M.D. Pathak. Effect of azolla on rice tungro virus disease. 8(3) (Jun 1983), 8-9.
- Ong Ching Ang, Chang Poon Min, Ho Nai Kim, T. Omura, T. Usugi, and Y. Saito. Morphology and serological relationship of penyakit merah virus in Malaysia and rice tungro virus in the Philippines. 8(6) (Dec 1983), 10.
- Rao, G. Mohana, and A. Anjaneyulu. Effect of meteorological factors on oviposition and nymphal hatching of rice tungro virus vector Nephotettix virescens. 8(1) (Feb 1983), 12-13.

## TUNGRO - VARIETAL RESISTANCE

- Tiongco, E.R., R.C. Cabunagan, and H. Hibino. Resistance of five IR varieties to tungro. 8(4) (Aug 1983), 6.

## UDBATTA

- Pandurange Gowda, K.T., S. Kuamaraswamy, and R.C. Yarguntaiah. Reaction of released and pre-release rice varieties to various diseases in Karnataka, India. 8(4) (Aug 1983), 7-8.

## UFRA

- Rahman, M.L., and B. Taylor. Nematode pests associated with deepwater rice in Bangladesh. 8(5) (Oct 1983), 20-21.

UPLAND RICE. See DRYLAND RICE.

## VIRUS DISEASE, UNIDENTIFIED

- Disthaporn, S., D. Chettanachit, and M. Putta. Unknown virus-like rice disease in Thailand. 8(6) (Dec 1983), 12.

WATER MANAGEMENT. See SOIL MOISTURE REGIMES.

## WATER WEEVIL

- Meneses Carbonnel, R. Pathogens and nematodes for control of rice water weevil in Cuba. 8(6) (Dec 1983), 16-17.

## WEBWORM

- Katanyukul, W., and T. Bhudhasamai. Chemical control of azolla insects. 8(1) (Feb 1983), 14-15.



## WEED CONTROL

- Biswas, S.B., and R.C. Thakur. Weed control in direct-seeded upland rice. 8(6) (Dec 1983), 20-21.
- Gautam, R.C., and K.C. Sharma. Effect of rice planting date and density on weed growth. 8(2) (Apr 1983), 16.
- Ghobrial, G.I. Effect of nitrogen fertilizer and weed management on performance of four rice varieties in Sudan Gezira. 8(2) (Apr 1983), 16-17.
- Kannaiyan, S., M. Thangaraju, and G. Oblisami. Effect of azolla inoculation on weed growth in wetland rice. 8(4) (Aug 1983), 21.
- Singh, R.D., P.A. Sarkar, and A.K. Ghosh. Tolerance of rice weeds for natural floodwater submergence. 8(5) (Oct 1983), 19-20.
- Singh, T.N., G. Singh, and H.P. Singh. Chemical weed control in dryland rice. 7(5) (Oct 1982), 21-22. Corrected in 8(5) (Oct 1983), 4.
- Venkatakrisnan, J., P. Vivekanandan, and M. Ramachandran. Weeds of Chingleput district, Tamil Nadu. 8(2) (Apr 1983), 17.

## WEED DENSITY

- Kolhe, S.S., P.P.N. Rao, and B.N. Mittra. Effect of planting density and submergence level on weed density in rice fields. 8(3) (Jun 1983), 15-16.

## WEEDS AS ALTERNATE HOST OF PESTS

- Domingo, I.T., E.A. Heinrichs, and R.C. Saxena. Occurrence of brown planthopper on Leersia hexandra in the Philippines. 8(4) (Aug 1983), 17.
- Gokulapalan, C., and M.C. Nair. Collateral hosts of Rhizoctonia solani Kuhn causing sheath blight of rice. 8(6) (Dec 1983), 10.
- Saxena, R.C., M.V. Velasco, and A.T. Barrion. Inter-specific hybridization between Nilaparvata lugens (Stål) and Nilaparvata bakeri (Muir) collected from Leersia hexandra Swartz. 8(3) (Jun 1983), 13-14.
- Saxena, R.C., M.V. Velasco, and A.A. Barrion. Morphological variations between brown planthopper biotypes on Leersia hexandra and rice in the Philippines. 8(3) (Jun 1983), 3.
- Zaheruddeen, S.M., and P.S. Prakasa Rao. Leptochloa panicoides Wight, an occasional host of the yellow rice borer Scirpophaga incertulas Walker. 8(4) (Aug 1983), 17-18.

## WETLAND RICE

- Balasubramanian, P., and S.P. Palaniappan. Effect of preplanting submergence and seedling age on wetland rice yield. 8(4) (Aug 1983), 26.
- Jakhro, A.A. Effect of phosphorus fertilizer placement on root and shoot growth of wetland rice. 8(2) (Apr 1983), 20-21.
- Kannaiyan, S., M. Thangaraju, and G. Oblisami. Effect of azolla inoculation on weed growth in wetland rice. 8(4) (Aug 1983), 21.
- Khind, C.S., and M.F. Kazibwe. Efficiency of different urea fertilizers in lowland rice. 8(5) (Oct 1983), 21-22.

- Khind, C.S., and M.F. Kazibwe. Nitrogen release patterns of sulfur-coated urea in wetland rice. 8(4) (Aug 1983), 25.
- Krisnarajan, J., and P. Balasubramanian. Azolla and blue-green algae for wetland rice culture. 8(4) (Aug 1983), 24.
- Mitra, N.K., S. Mallik, and S. Biswas. Screening wetland rice varieties for drought tolerance. 8(4) (Aug 1983), 8-9.
- Ramaswamy, V., and S. Sankaran. Effect of crop residue on blue-green algae growth in wetland rice. 8(4) (Aug 1983), 22.
- Verma, U.K., I.P. Sharma, and R.S. Singh. Effect of summer plowing with different implements on wetland rice yields. 8(4) (Aug 1983), 27.

## WHITE GRUB

- Garg, D.K., and N.K. Shah. White grub outbreak on rainfed dryland rice in Uttar Pradesh. 8(4) (Aug 1983), 16-17.

## WHITE LEAFHOPPER

- Barrion, A.T., and J.A. Litsinger. Parasites of white rice leafhopper Cofana spectra (Dist.) (Hemiptera: Cicadellidae) in the Philippines. 8(6) (Dec 1983), 20.
- Sekar, P., and S. Chelliah. Varietal resistance to white leafhopper. 8(2) (Apr 1983), 7.

## WHITEBACKED PLANTHOPPER

- Gyawali, B.K. Whitebacked planthopper outbreak in Kathmandu Valley, Nepal. 8(1) (Feb 1983), 10.
- Lal, M.N., S.K. Verma, G.C. Sachan, P.K. Pathak, and J.S. Nanda. Varietal resistance to whitebacked planthopper. 8(2) (Apr 1983), 8.
- Pradhan, R.B., N.K. Khatri, and K.C. Sharma. Whitebacked planthopper Sogatella furcifera Horvath on rice in Kathmandu Valley. 8(4) (Aug 1983), 18.
- Shukla, B.C., S.K. Shrivastava, D.J. Pophaly, U.K. Kaushik, R.K. Agrawal, and R. Gupta. A new predaceous beetle of whitebacked planthopper in India. 8(5) (Oct 1983), 14.
- Valencia, S.K., O. Mochida, and R.P. Basilio. Efficacy of buprofezin (NNI-750) for brown planthopper (N. lugens), green leafhopper (Nephotettix sp.), and whitebacked planthopper (S. furcifera) control. 8(4) (Aug 1983), 18.

## WHORL MAGGOT

- Barrion, A.T., and J.A. Litsinger. Trichomalopsis apanteloctena (Crawford) (Hymenoptera: Pteromalidae): correct name for the larval parasite of the rice skipper. 8(6) (Dec 1983), 14.
- Saroja, R., and N. Raju. Seasonal incidence of rice whorl maggot at Tirur, India. 8(1) (Feb 1983), 16.
- Singh, H.M., and S.M.A. Rizvi. Efficacy of insecticide against rice whorl maggot. 8(4) (Aug 1983), 14-15.

#### YELLOW BORER

- Chandramohan, N., and S. Chelliah. Rice resistance to yellow stem borer. 8(2) (Apr 1983), 8.
- Zaheruddeen, S.M., and P.S. Prakasa Rao. Evaluation of some wild *Oryzae* species as yellow rice borer hosts. 8(3) (Jun 1983), 12-13.
- Zaheruddeen, S.M., and P.S. Prakasa Rao. *Leptochloa panicoides* Wight, an occasional host of the yellow rice borer *Scirpophaga incertulas* Walker. 8(4) (Aug 1983), 17-18.

#### YELLOW ORANGE LEAF DISEASE

- Disthaporn, S., D. Chettanachit, and M. Putta. Unknown virus-like rice disease in Thailand. 8(6) (Dec 1983), 12.

#### YIELD COMPONENTS

- Sen, A., and J.M.I. Gulati. Effect of calcium peroxide coating on yield and yield attributes of Jaya. 8(4) (Aug 1983), 26.

#### ZINC DEFICIENCY

- Sadana, U.S., and P.N. Takkar. Methods of zinc application to rice on sodic soil. 8(2) (Apr 1983), 21-22.

#### ZINC, RESPONSE TO

- Sadana, U.S., and P.N. Takkar. Rice response to zinc at various salinity and alkalinity levels. 8(5) (Oct 1983), 29.
- Swarup, A. Effect of micronutrients and farmyard manure on yield and micronutrient content of rice. 8(5) (Oct 1983), 22.





